



# **PenMount PM1570 PCAP Control Board Datasheet**

Version 1.0  
2021/10/28

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**Revision history**

Rev.	Date	By	Summary	Remark
1.0	2021/10/28	Willi	New Release	

## 1.0 Introduction

The PenMount PM1570 control board is a high specification (Projected Capacitive Input, PCAP) touch panel controller product introduced by PenMount. The PenMount PM1570 can be applied in the consumer, commercial and the industrial fields.

The PenMount PM1570 provides USB and I<sup>2</sup>C interfaces and supports PCAP touch panels sized from 17" to 24". PenMount PM1570 also supports a wide range of operating systems such as Windows and Linux.

## 2.0 Specifications

Parameter	feature	
Controller part number	PenMount K1-02	
Number of sensing line	67	
Number of driving line	41	
Supporting projected capacitive touch panel size	Projected capacitive type, from 17" to 24"	
Interface	USB	12Mbps full-speed and 1.5Mbps low-speed
	I <sup>2</sup> C	100kHz standard mode and 400kHz fast mode
Firmware resolution	16384 x 9600 (Typical)	
Response time	Average < 40ms	
Sampling rate	One point	110 Hz(Typical)
	Ten points	110 Hz(Typical)
Operating voltage	USB: 4.75~5.25Vdc I <sup>2</sup> C: 2.97~3.4Vdc	
Power consumption	Working mode	160mA @ 5Vdc (Typical)
	Idle mode	45mA @ 5Vdc (Typical)
Operating temperature	-40°C ~ +85°C	
Storage temperature	-40°C ~ +85°C	
Relative humidity range	95% RH at 60°C. RH Non-condensing	
EMS specification	RS	IEC61000-4-3 Level 3 , Criteria A
	CS	IEC61000-4-6 Level 3 , Criteria A

Note :

CS and RS performance, power consumption, response time and sample rate will vary according to different firmware versions and parameter settings.

### 3.0 Mechanical drawing

#### 3.1 Mechanical size

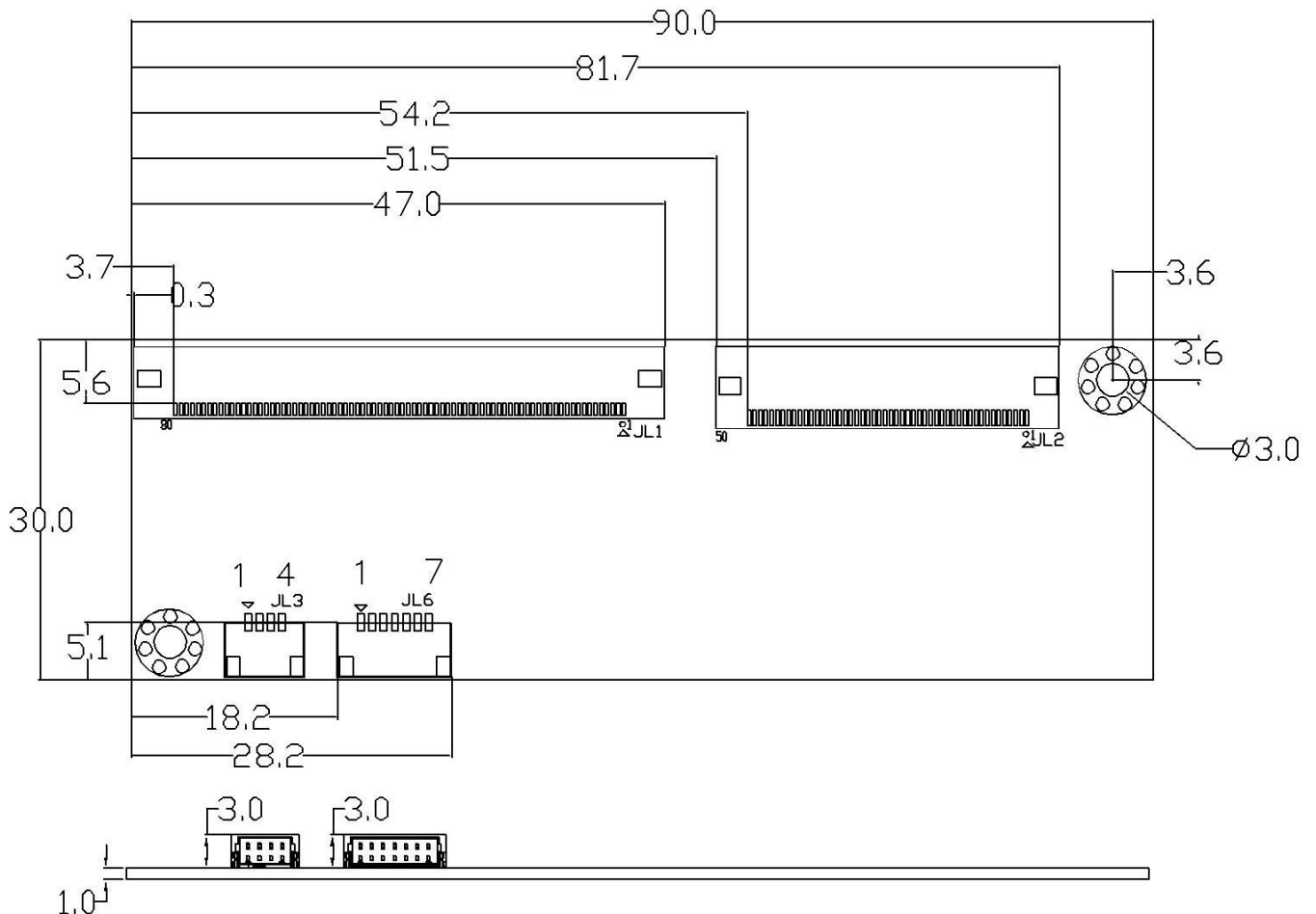
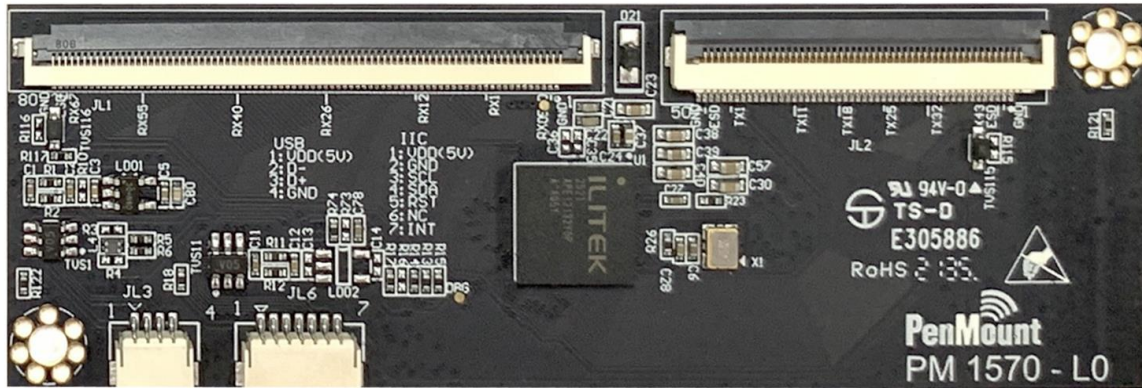


Figure 1 PM1570

## 3.2 Touch line pin definition

JL1 80Pin ZIF , PH 0.5mm ; FG2280-HC21RL							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
1	System_GND	21	Rx57	41	Rx37	61	Rx17
2	Guard Ring	22	Rx56	42	Rx36	62	Rx16
3	NC	23	Rx55	43	Rx35	63	Rx15
4	NC	24	Rx54	44	Rx34	64	Rx14
5	NC	25	Rx53	45	Rx33	65	Rx13
6	NC	26	Rx52	46	Rx32	66	Rx12
7	NC	27	Rx51	47	Rx31	67	Rx11
8	NC	28	Rx50	48	Rx30	68	Rx10
9	NC	29	Rx49	49	Rx29	69	Rx9
10	NC	30	Rx48	50	Rx28	70	Rx8
11	NC	31	Rx47	51	Rx27	71	Rx7
12	Rx66	32	Rx46	52	Rx26	72	Rx6
13	Rx65	33	Rx45	53	Rx25	73	Rx5
14	Rx64	34	Rx44	54	Rx24	74	Rx4
15	Rx63	35	Rx43	55	Rx23	75	Rx3
16	Rx62	36	Rx42	56	Rx22	76	Rx2
17	Rx61	37	Rx41	57	Rx21	77	Rx1
18	Rx60	38	Rx40	58	Rx20	78	Rx0
19	Rx59	39	Rx39	59	Rx19	79	Guard Ring
20	Rx58	40	Rx38	60	Rx18	80	System_GND

JL2 50Pin ZIF , PH 0.5mm ; FG2250-HAN1003							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
1	System_GND	14	Tx9	27	Tx22	40	Tx35
2	Guard Ring	15	Tx10	28	Tx23	41	Tx36
3	NC	16	Tx11	29	Tx24	42	Tx37
4	NC	17	Tx12	30	Tx25	43	Tx38
5	Tx0	18	Tx13	31	Tx26	44	Tx39
6	Tx1	19	Tx14	32	Tx27	45	Tx40
7	Tx2	20	Tx15	33	Tx28	46	NC
8	Tx3	21	Tx16	34	Tx29	47	NC
9	Tx4	22	Tx17	35	Tx30	48	NC
10	Tx5	23	Tx18	36	Tx31	49	Guard Ring
11	Tx6	24	Tx19	37	Tx32	50	System_GND
12	Tx7	25	Tx20	38	Tx33		
13	Tx8	26	Tx21	39	Tx34		

### 3.3 Interface pin definition

PM1570 includes USB/I<sup>2</sup>C communication interfaces.

JL3 / 4PIN / WA2404-HD1100J						
PIN NO.	USB	Description	Min	Typ	Max	Unit
1	USB_5V	Positive power supply	4.75	5	5.25	V
2	D-	D- pin of internal USB transceiver		3.3		V
3	D+	D+ pin of internal USB transceiver		3.3		V
4	System_GND	Ground		0		V

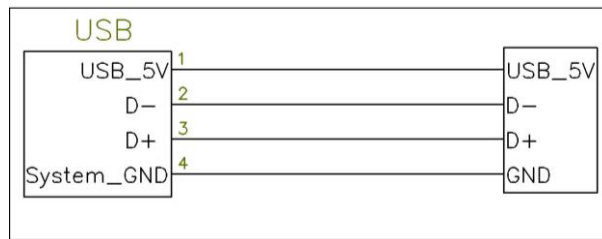


Figure2 USB interface

JL6 / 7PIN / WA2407-HD1100J						
PIN NO.	I <sup>2</sup> C	Description	Min	Typ	Max	Unit
1	VCC	Positive power supply	2.97	3.3	3.4	V
2	System_GND	Ground		0		V
3	SCL	Serial data line for I <sup>2</sup> C. Open drain requires external pull-up to 3.3V.		3.3		V
4	SDA	Serial clock line for I <sup>2</sup> C. Open drain requires external pull-up to 3.3V		3.3		V
5	nRESET	Chip reset signal. Normal: High, Active Reset: Low		3.3		V
6	NC					
7	nINT	Processor Interrupt. This pin is active low, open drain requires external pull-up to 3.3V.				V

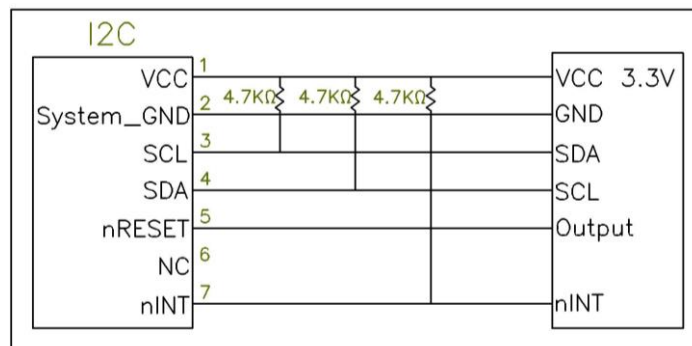


Figure3 I<sup>2</sup>C interface

### 3.4 Connector specifications

**1.0mm pitch/Disconnectable Crimp style connectors**



Circuits	Dimensions (mm)	
	A	B
4	3.0	6.0
5	4.0	7.0
7	6.0	9.0

## 4.0 Drivers and Utilities

### 4.1 Drivers

**For I<sup>2</sup>C:**

- Windows 8,10: HID over I2C protocol.
- Linux / Android : provide source code for integration.

**For USB**

- Windows 7,8,10: multi touch, Inbox driver.
- Linux: inbox driver after kernel 3.0.8, provide source code for kernel 2.6.32 ~ 3.0.8.

Note:

Please contact us for further information.

### 4.2 Utilities

Firmware adjustment utility allows user to fine tune the touch panel sensitivity.

Note:

Please contact us for further information.

5.0 Others

5.1 ROHS compliance

This control board is ROHS compliant

5.2 EMC protection recommendations

Please refer to PCAP touch screen integration guides.

5.3 Noise Protection

To achieve good noise interference protection capabilities, PenMount requires paired interface cables possess comprehensive EMI shielding.

The cable should have a woven or spirally copper shield with 360° shield coverage. The shield must be terminated to the receptacle and be connected to ground plane carefully.

Below is an example for 4-pin USB cable diagram. For other implementation, please follow the same design rules.

